

## 4. Mechanical Grade Diamond

We deliver [Mechanical Grade Diamond](#) components with sub-micron tolerances, crystal-orientation control, and <5 nm surface roughness – engineered to outperform in cutting tools, nano-indentation, and high-pressure research.

### Why Specifications Matter

#### Crystal Orientation Control

<±3° miscut accuracy ensures:

Predictable wear patterns in cutting tools

Uniform stress distribution in DAC anvils

Consistent hardness in nano-indenters

#### Nanometer Surface Finish

<5 nm Ra enables:

Mirror finishes without post-processing

Reduced friction in micro-fluidics

Accurate force measurements in tribology

#### Laser-Cut Edges

Near-theoretical strength at edges

No micro-chipping in brittle materials processing

100% dimensional inspection pre-shipment

### Technical Validation

#### Every component includes:

3D interferometric surface map (flatness/roughness)

XRD crystal orientation report

SEM edge integrity analysis

CMM dimensional verification